REMARKS

The Office Action mailed on May 21, 2002, has been received and reviewed.

As the three-month shortened statutory period for response to the May 21, 2002, Office Action expired on August 21, 2002, this response is being filed along with a petition for a three-month extension of time and the appropriate fee.

Claims 25-34 are currently pending in the application. Claims 25-29 stand rejected. Claims 30-34 have been withdrawn from consideration. All amendments are made without prejudice or disclaimer.

Reconsideration of the referenced application is respectfully requested.

I. 35 U.S.C. § 102(e)

A. King

Claim 25 stands rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 5,633,724 to King et al. (hereinafter "King").

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). In the present case, the cited art fails to disclose the subject matter contained in the amended claims of the present invention.

King describes a biochemical assay system. The biochemical assay system of King includes a waveguide with an array of reaction sites on a surface thereof, a light source oriented to direct light into the waveguide and, thus, generate an evanescent field adjacent at least one surface of the waveguide, and a detector that is oriented to directly capture light emitted from the array of reaction sites as a biochemical reaction occurs at one such site. King explains that "conventional techniques of mounting analytes on an array on a suitable substrate and labeling with molecular tags (such as fluorophores) . . ." may be used.

In discussing the use of evanescent excitation to simultaneously illuminate a large number of pixels, King compares the breadth of evanescent excitation techniques to the

narrowness of conventional, focused illumination techniques. King explains that conventional, focused illumination techniques are typically only directed to a small set of pixels at a given point in time, then moved to illuminate another small set of pixels. Col. 3, lines 26-27. Thus, use of the term "pixels" in King appears to be strictly limited to various points on a waveguide surface to which a confluent layer of capture molecules is secured.

King lacks any express or inherent description that the "pixels" mentioned therein comprise "site-specifically immobilized" capture oligonucleotides, or capture oligonucleotides that have been immobilized to specific sites on a waveguide surface, as recited in independent claim 25.

As King does not anticipate each and every element of independent claim 25, it is respectfully submitted that, under 35 U.S.C. § 102(e), independent claim 25 is allowable over King. Accordingly, it is respectfully requested that the 35 U.S.C. § 102(e) rejection of independent claim 25 be withdrawn.

II. 35 U.S.C. § 103(a)

It is respectfully submitted that, to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the disclosure of the application at issue.

A. King in View of Squirrell

Claims 26, 28, and 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over King in view of U.S. Patent 5,750,337 to Squirrell (hereinafter "Squirrel").

The teachings of King are summarized above.

Squirrell teaches, among other things, a method for detecting nucleic acid sequences that employs a cylindrical waveguide. As depicted in FIG. 1 of Squirrell, light from an external source is coupled into the waveguide from an end thereof. The light is reflected within the cylindrical waveguide in such a way as to generate an evanescent field adjacent to the surfaces thereof. Capture molecules that have been immobilized to the surface of the cylindrical waveguide then bind both analyte and fluorescently labeled tracer molecules within one or more sample and/or test solutions. The evanescent field excites the fluorescent labels of the bound tracer molecules, causing them to fluoresce. Some of the fluorescent light is then coupled back into the cylindrical waveguide, where it is internally reflected. FIG. 1 of Squirrell shows that this internally coupled fluorescence may then be detected as it exits, or outcouples, an end of the cylindrical waveguide.

Like King, Squirrel lacks any teaching or suggestion of providing a waveguide which includes site-specifically immobilized capture oligonucleotides on a surface thereof.

Claims 26, 28, and 29 are each allowable, among other reasons, as depending directly from claim 25, which is allowable.

B. King in View of Wybourne

Claim 27 is rejected under 35 U.S.C. § 103(a) as being unpatentable over King in view of U.S. Patent 5,465,151 to Wybourne et al. (hereinafter "Wybourne").

The teachings of King are summarized above.

Wybourne teaches, among other things, an assay that employs a technique known as interferometry to detect the presence of analytes in a sample. A waveguide that is useful in interferometry, as illustrated in FIG. 1 of Wybourne, includes an incoming section, a first junction where the waveguide splits into two adjacent sections, a second junction where the two sections converge, and an outgoing section, from which light is detected. One of the two adjacent sections of the waveguide is used as a reference, while the other of the two adjacent sections is used to detect the amount of analyte, if any, present in a sample. The reference section does not have capture molecules immobilized relative thereto. The detection section does have capture molecules immobilized thereto. As light passes through the waveguide, the

characteristics of the light that passes through the detection section thereof are altered, making the light that has passed through the detection section different than that which has traveled through the reference section. These differences are detected as light is coupled out of the waveguide through the outgoing section thereof and are indicative of the amount of analyte present in a sample solution.

As with King and Squirrel, Wybourne does not teach or suggest an assay which includes providing a waveguide with capture oligonucleotides site-specifically immobilized to a surface thereof.

Claim 27 is allowable, among other reasons, as depending from claim 25, which is allowable.

Additionally, it is respectfully submitted that one of ordinary skill in the art would not have been motivated to combine the teachings of King and Wybourne in the manner that has been asserted. Specifically, it is respectfully submitted that one of ordinary skill in the art would not have been motivated to modify a fluorescence assay, such as that taught in King, with teachings that relate to an interferometry assay, such as that taught in Wybourne.

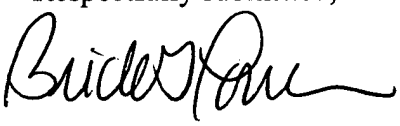
It is, therefore, respectfully submitted that the Office has not established a *prima facie* case as to the obviousness of claim 27 and that, under 35 U.S.C. § 103(a), claim 27 is allowable over the combination of Squirrell and Wybourne.

In view of the foregoing, it is respectfully requested that the Office withdraw the 35 U.S.C. § 103(a) rejections of claims 26-29.

CONCLUSION

It is respectfully submitted that each of claims 25-29 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the referenced application has been passed for issuance. If any issues preventing the allowance of any of claims 25-29 remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



Brick G. Power
Registration No. 38,581
Attorney for Applicants
TRASKBRITT, PC
P. O. Box 2550
Salt Lake City, Utah 84110-2550
Telephone: (801) 532-1922

Date: November 21, 2002